OCT 1 1 2002

N THE UNITED STATES PATENT AND TRADEMARK OFFICE

88

ത ത ത ത ത

In re Applicant:

CHARLES A. LIEDER LLOYD E. FUNK DAVID A. BARKER

Filed: April 21, 2000

Serial No.: 09/556,852

For: GASOLINE-OXYGENATE BLEND

AND METHOD OF PRODUCING

THE SAME

Group Art Unit: 1714

#10/fm

Examiner: M. Medley

Attorney Docket No.: 013129/00025

DECLARATION OF CHUCK LIEDER UNDER 37 C.F.R. 1.131

This Declaration Under 37 C.F.R. §1.131 serves to establish completion of the invention in the above-referenced patent application in the United States on a date prior to the effective date of U.S. Patent No. 6,328,772 B1 ("Scott"), which has been cited by the Examiner in the above-referenced proceeding.

- 1. I am over the age of 18;
- 2. I received a Ph.D. degree in Physical Chemistry from Stanford University in 1974. I further received a B.A. degree in Chemistry and Math from Hope College in 1970.
- Jacobs in the served as a Research Scientist in Reaction/Environmental Engineering. Since that time, I have served as a Supervisor for Process Development, Technical Manager in Process Engineering, an Operations Manager in Crude/Diesel/Hydrogen/Sulfur, a Senior Staff Engineer to Fuels Regulatory Technical Support and an Engineering Advisor in Gasoline/Fuels Blending Technology. From 1989 to 1990, I was an "Executive-on-Loan" to the California Energy Commission.
- 4. The effective date of Scott is no earlier than July 28, 1999. The invention in the above-referenced patent application was reduced to practice earlier than July 28, 1999. To

establish the reduction to practice of the invention set forth in the above-referenced patent application prior to July 28, 1999, I hereby submit, as attached, Exhibit A. Exhibit A is a compilation of gasoline blends produced at Shell prior to July 28, 1999. It has been reducted in that the dates of production of the gasoline formulation have been blacked out. Highlighted in yellow, are the gasoline blends which have a RVP less than 7.0 and an ethanol content greater than 5.0 volume percent. Highlighted in pink are the gasoline blends which have a RVP less than 7.2 and an ethanol content greater than 9.6.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and believe are believe to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATED: October 4, 2002.

Charles a. Lieder

ن پ

•	Т	<u></u>	നി	οſ	41	2	0	6	8	7	S.	2	9	4	8	į	Ġ	6	60	9	ω		Т	7	Т	Т	1	1		_				П	1	1 1	T	Т	Ī			+	T
\perp	ğ	E30		_ 1	- 1				1	1	81.5				78.8			85.9		Ľ	93.8			1			1	L	Ц	1		Ц		Ц	\perp	Ц	1	L	Ц	\int			
	ర్	E30							83.2		81.5				. 1				79.4	55.7	92.2																						
	Off On O	E200	40.2									42.6				49.9	42.5	47.2	45.2	46.5	47.0																						
	ర్	E200	90.0	34.9	27.2	38.8	38.2	34.4	32.4	36.9	35.7	31.9	38.7	41.8	39.3	39.9	31.7	37.2	36.3	38.0	37.7													П	T								
	¥	\neg	406.9	428.4	403.3	425.8	431.2	403.5	419.0	428.7	422.2	416.7	412.3	419.9	425.5	424.8	405.9	408.6	422.8	413.2	369.5			T			Ī	T							Ī								
T	ő	\neg	801.8	121.6	405.9	419.4	420.0	104.5	113.6	119.5	123.3	116.1	115.2	120.8	421.0	128.0	110.4	420.0	424.1	415.5	373.0			1				T		1		T	Ī	П	Ť		1	Ī		Ī		Ī	
5	ð	5 8	308.3	334.0 421.6	302.7	49.7	49.5	294.6 404.5	325.8 413.6	42.7	333.3 423.3	324.1 416.1	318.2 415.2	341.1 420.8	346.8	333.0 428.0	313.5 410.4	318.2	345.0	35.7	75.5							T		T			İ		\dagger	H	†			İ			
% EK	ő	8	309.5	38.9	304.0	346.1	47.9 3	99.1 2	25.6 3	49.0 3	32.8	26.8 3	20.5 3	42.4 3	45.3 3	337.1 3	313.5 3	324.1 3	341.0 3	36.9	279.8 275.5			\dagger		H	1	+		\dagger			l		\dagger		+			1	Ħ	1	\dagger
On is Online Analyzer Value / Off is blended value with 10 % EtOH	Off	9	224.4 3	221.5 3	225.5 3	218.3 3	18.5 3	13.1 2	23.9 3	17.2 3	0 227.3 218.3 332.8 3	24.6 3	206.2 320.5	36.2 3	11.8 3	200.1 3	223.0 3	210.0 3	219.6 3	214.3 3	208.4 2		\dagger	\dagger				+					l	H	\dagger		\dagger	+	H	\dagger			\dagger
/alue	П	ě	227.0 22	226.8 2	230.6 2	224.7 2	4.8 2.	2.0 2	7.2 2.	3.6 2	7.3 2	8.3 2	8.6 20	217.2 2	221.1 2	219.7 20	226.4 2.	221.5 2	227.2 2	225.5 2	215.1 20		1	\dagger	+			1		†	-		l	H	\dagger	\parallel	+	İ	H	\dagger	+	\parallel	+
pep_	ō	2	3.1 22	8.6 22	3.2 23	136.6 22	6.6 22	9.1 22	8.4 22	6.8 22	8.0 22	9.1 22	5.3 21	6.8 21	6.9 22	3.7 21	9.3 22	5.5 22	7.5 22	136.4 22	138.4 21	-	$\frac{1}{1}$	+			+	+		+			l		+		+	╁	H	+	+		+
s ple	ğ	Ě	6.64 158.4 143.1	7.01 146.8 138.6	6.77 159.9 143.2	13	1.5 13	.1 13	.7 1अ	7.05 145.4 136.8 2	7.11 144.9 138.0	6.93 148.6 139.1	7.25 146.0 135.3	.6 13	7.08 142.8 136.9	7.22 143.0 133.7	5.75 7.16 149.7 139.3	7.12 145.3 135.5	7.06 145.4 137.5	3.6 13	0.13		+	1	-	Н	+	+		+		H	H	H	+		+	-	$\frac{ }{ }$	+	+	+	+
5	δ	P 710	158	11 146	7 156	7.30 142.1	19 144	6 150	15 148	5 145	11 14	33 148	25 146	11 142	142	22 143	16 149	12 145	145	32 143	6 151.0			1	H	4	1	-		+	<u> </u>		-	Н	+	\parallel	+	ļ	\prod	+	_	+	+
Value	ð	<u>원</u>			5.73 6.7	5.70 7.3	5.50 7.0	5.60 6.7	5.60 7.0	5.60 7.0	30 7.1		78 7.2	55 7.0	63 7.0	57 7.2	75 7.1	5.72 7.	5.70 7.0	5.78 7.32	5.70 7.16		-	+		H	+	+	H	+	<u> </u>	H	H	H	+		+	+	$\left \cdot \right $	+	+		+
yzer	Off On Off	N N	89.50 5.	83.62 85.10 5.67	89.10 5.	83.30 5.	.10 5.	.00 5.0	.30 5.0	.90 5.0	81.22 82.70 5.60	.30 5.	.50 5.	.50 5.	82.71 86.90 5.63	83.00 5.57	88.20 5.	40 5	84.80 5.	83.00 5.			1	+	H		1			+			ŀ	H	$\frac{1}{1}$		+	+	H	+	H		+
e Ang	Б	∑ Z	44 89	62 85	11 89	02 83	86 84	56 88	35 88	82.62 84.90	22 82	87.03 88.30	14 84	13 83	71 86	54 83	27 88	82.74 84.40	50 84	92 83	38 88		+	+		H	+	+		+	+		$\frac{1}{1}$	H	+		+	+		+	+	\dashv	+
	δ	╗				30 81.02	00 81.	99.60 86.56 88.00	50 87.	10 82.	0 81.	20 87.	94.60 84.14 84.50 5.78	30 82.	30 82.	94.00 81.54	30 82.27	30 82.	50 82.50	93.00 80.92	99.20 87.38 88.20	Н	+	+			1	+	H	+	\downarrow		+	H	+	H	+	ļ		1	-	4	\perp
0	₽	S S			~,								1 1					1	1								1				_				1		1			1			
		S S	97.24	91.06	98.19	87.99	87.98	97.14	96.34	88.73	88.43	96.67	90.60	87.92	88.31	88.13	96.33	90.11	89.43		96.22									1													
	APIG	60F	57.42	56.71	54.42	57.22	56.64	54.17	57.12	58.18	54.83	55.57	57.42	56.77	56.87	53.78	56.54	56.39	54.68	57.71	58.53																						
		%lox	23.3	25.0	33.9	23.8	24.3	33.0	25.7	16.8	31.1	28.2	24.8	27.8	26.1	31.6	28.5	25.1	30.8	27.1					Ī		1				Ī	İ		П			1	T					T
Ī	Olef /	%lox	1.4	2.9	2.3	3.7	1.9	4.6	2.1		3.1	i i			1 1		i	3.1	1.2	4.6				1	ľ		1	Ī		Ī								Ī		T			
	-		0.0023	0.0197	0.0034	0.0080	0.0143	0.0070	0.0036	0.0261	81.5 0.0068	.0083	0106	0108	0215	.0247	0.0116	0.0213	0.0260	0.0177	0.0088																						
5	E300 S	× Nov	88.3	82.0	89.4 0	76.5 0	77.0	0.00	33.8	79.7	31.5 0	34.5 0	85.6 0.0106	30.4 0	78.8 0.0215	32.7 0	87.6	85.9	79.8 0	79.6 0	93.8 0	-				H	1	\dagger		1	\dagger		\dagger		\dagger					1	+	\parallel	t
10%	E200 E							45.5	42.8			42.6		48.4	46.1	49.9	42.5	I		_	47.0		1	1	l		1					H	t	H	+	Н	\dagger	\dagger	H	1	+	+	t
S WIT	Benz E	ov %lov	0.53	- 1				0.63					1.05			0.78	0.64	1	╄-	1	,	_		†			+	+	Н	\parallel	$\frac{1}{1}$		\dagger		\dagger			\dagger	H	+	\dagger		t
perti		×ol%	9.50	20	.50	3.50 C	3.50	3.50 C	3.50 C	.50 C	9.50	3.50 C	9.50	3.40 C	.50 C						69.6		H	+	+		1	t	H	1	l		t	H	\dagger	Н	+	\dagger			t	H	t
RFG Properties with 10% EtOH	\neg	1		_	_					_		_	-	_	3.50			3.56			3.59	Н	H	\dagger	t	H	\dagger	+	H	+	\dagger	\parallel	+	$\ $	\dagger	H	+	t	H	\parallel	-	\parallel	+
2	RVP Oxy										ш		7.25 3			7.22 3	Ц	1	_	_	ш	Н	H	+	+	$\ $		+	\parallel		+	\parallel	+	$\ $	+	\parallel	\mid	+			+	\parallel	\dagger
\dagger		906		٦							Γ	П		Γ			-	İ	T	T	П	H	H	\dagger	+	$ \cdot $	+	+	H	H	\dagger	H	\dagger	\parallel		\parallel	\parallel	+	H	\parallel	+	\parallel	\dagger
+		je		П			П	ns a	_		П				2		Г		Г	Π	П	Н	H	+	+	H	-	+	\parallel	\parallel	+	$\ $	+	H	+	H	$\ \cdot \ $	+	\parallel	H	+	\parallel	+
				A34		A34) A31	5 A-32	T/A28		A31		T/A34	1/A3	A-34	A31		A34				Ц	Ц	1	-	\prod		-	\parallel		1		1	\prod	1	\coprod		1	\parallel		-		
		Batch	99E351	99E352	909N66	99E364	39N62C	99E375	99E370	991.427	19N641	99E386	99E392	19E402	99N670	99L480	99E416	99N689	669N66	991509	99N721																						
\dagger			5	တ	တ	တ	5	5	6	6	6	6	6	6	6	6	6	5	6	5	6		H			H		\dagger	T	\parallel	\dagger		1	\parallel	+	H	H	t	H		t	H	T
		Date																																									





IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

§

ത ക ക ക ക ക ക ക ക ക ക ക

In re Applicant:

CHARLES A. LIEDER LLOYD E. FUNK DAVID A. BARKER

Filed: April 21, 2000

Serial No.: 09/556,852

For: GASOLINE-OXYGENATE BLEND

AND METHOD OF PRODUCING

THE SAME

Group Art Unit: 1714

Examiner: M. Medley

Attorney Docket No.: 013129/00025

DECLARATION OF CHUCK LIEDER UNDER 37 C.F.R. 1.132

I, Chuck Lieder, do hereby declare that:

- 1. I am over the age of 18;
- 2. I received a Ph.D. degree in Physical Chemistry from Stanford University in 1974. I further received a B.A. degree in Chemistry and Math from Hope College in 1970.
- 3. I have been employed by Shell Oil Company ("Shell") since 1974. My first position at Shell was as a Research Scientist in Reaction/Environmental Engineering. Since that time, I have served as a Supervisor for Process Development, Technical Manager in Process Engineering, an Operations Manager in Crude/Diesel/Hydrogen/Sulfur, a Senior Staff Engineer to Fuels Regulatory Technical Support and an Engineering Advisor in Gasoline/Fuels Blending Technology. From 1989 to 1990, I was an "Executive-on-Loan" to the California Energy Commission. Since 1990, I have been engaged in research and development relating to refinery blending and fuel compositions.
- 4. Southwest Research Institute ("SRI") is an independent, nonprofit, applied engineering and physical sciences research and development organization. To my knowledge, the Fuel Conformance Section of the Petroleum Products Research Department ("Fuel Conformance") of SRI is responsible for providing (i.) analytical and physical testing; and (ii.) evaluating the qualifications of fuels provided by major oil corporations.
- 5. Exhibit A and Exhibit B, copies attached, were issued to customers of Fuel Conformance, including Shell, in June, 1992 and summarize the findings of SRI for selected gasoline

fuels in selected areas of the United States. Physical and chemical properties of the selected gasoline fuels as set forth in these Exhibits. I have reviewed Exhibit A and Exhibit B and am familiar with the grades of gasoline fuel blends in the public domain in June, 1992. In addition, since 1990, I have been well versed in the capacity of refineries to manufacture gasoline fuel blends.

- gasoline fuel containing 9.2 volume percent ethanol and a Reid Vapor Pressure (RVP) of 6.7. Based on my knowledge of refineries and blending practices of refineries, in order for a gasoline blend to be characterized as having 9.2 volume percent ethanol and a RVP of 6.7, the base gasoline would have had to have a RVP less than 5.5 to 5.7. In 1992, it is highly unlikely that a gasoline blend having a RVP less than 6.7 and an ethanol content of 9.2 volume percent because refineries did not have the necessary components to effectuate such blends with the properties of the cited blend in Exhibit A and Exhibit B. In particular, refineries in 1992 would not have been set up for the production of a gasoline blend having a RVP of 5.5 to 5.7.
- 7. The first datapoint in Exhibit B and the second datapoint in Exhibit A is an outlier and one versed in the field of gasoline fiels would readily conclude that this datapoint is an outlier for the June, 1992 time period. An outlier is a piece of data that appears to not belong within the range of data being reported. The cause of the outlier could be attributable to instrumentation error, keypunch error, transcription error or sample contamination. My conclusion that the datapoint is an outlier is further supported by the fact that no other sample reported in the study having an ethanol content of 8.3% or greater had a RVP of less than 8.9. As such, the RVP for this gasoline fuel is an outlier and outside of the range of data that would have been anticipated for the June, 1992 time period.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and believe are believe to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATED: October 4, 2002.

Chuck Lieder

Charles a. Ligar

Exhibit A

g : §

Б

H

1992

EXHIBIT A

0

0

0

٥.

0

91.7 82.8 87.3 87.0 59.2 126 205 339 :

212

60.3

87.0

		ETOH VOL%	CITY_NAME	COMPANY_NAME	GRADE		T50 (F)	
REDACTED			REDACTED	REDACTED	MU	122		
REDACTED			REDACTED			139		
REDACTED			REDACTED			136		
REDACTED			REDACTED			136		
REDACTED			REDACTED			131		306
REDACTED		5.7						
REDACTED					~	130		
REDACTED			REDACTED			132		
REDACTED			REDACTED			126		
REDACTED			REDACTED			.139		
REDACTED			REDACTED			137		
REDACTED		10.1				134		
REDACTED			REDACTED			123		
REDACTED	7.1		REDACTED		_	138		
REDACTED		8.7	REDACTED	REDACTED		138		
REDACTED			REDACTED			140		
REDACTED			REDACTED			134		
REDACTED	7.1	10.1	REDACTED					340
REDACTED			REDACTED			132		
REDACTED	7.2		REDACTED			120		
REDACTED		•						361
REDACTED	7.2	10.1	REDACTED					358
REDACTED	7.2	10.1	REDACTED			135		
REDACTED	7.3	7.7	REDACTED	REDACTED		141		
REDACTED	7.3	7.4	REDACTED	REDACTED		139		
REDACTED	7.3	7.2	REDACTED			138		
REDACTED	7.3	7.1	REDACTED	REDACTED		134		
REDACTED	7.4	9	REDACTED	REDACTED		140		
REDACTED	7.4	9.3	REDACTED	REDACTED		135		
REDACTED	7.5	7.2	REDACTED	REDACTED		133		
REDACTED	7.5	10.5	REDACTED	REDACTED			175	
REDACTED	7.5	7.5	REDACTED	REDACTED	MU			349
REDACTED	7.5	8	REDACTED	REDACTED	PU	136	216	317
REDACTED	7.5	. 10	REDACTED	REDACTED	MU	133	203	333
REDACTED	7.5	10.1	REDACTED	REDACTED	PU	140	229	321
REDACTED			REDACTED	REDACTED	PU	140	217	
REDACTED	7.6	8.87	REDACTED	REDACTED	RU	121	200	305
REDACTED	7.6	8.4	REDACTED	REDACTED	PU	136	215	330
REDACTED	7.6	7.5	REDACTED	REDACTED	PU	138	235	338
REDACTED	7.6		REDACTED		PU	137	234	334
REDACTED	7.6		REDACTED		MU	130	190	321
REDACTED	7.6	11.6	REDACTED	REDACTED	PU	137	217	336
REDACTED			REDACTED		RU	131	187	331
REDACTED			REDACTED		RU	130	197	340
REDACTED			REDACTED			133		350
REDACTED			REDACTED				199	320
REDACTED			REDACTED		PU	137	214	331
REDACTED			REDACTED					338
REDACTED			REDACTED					327
REDACTED	7.6	10.5	REDACTED	REDACTED	PU	139	212	304